REMARKS/ARGUMENTS

Amendments were made to the specification to correct errors and to clarify the specification. No new matter has been added by any of the amendments to the specification.

Claims 1-43 are pending in the present application. By this Response, claims 4, 11 and 15-43 are canceled, claim 1 is amended, and claim 44 is added. Reconsideration of the claims is respectfully requested.

I.   Objection to the Specification

The examiner has objected to the specification because it does not provide the serial number for the cross reference to the related application. In response, the specification has been amended to overcome this objection.

II.   Double Patenting

The examiner has provisionally rejected claims 1, 15 and 16 on the ground of non-statutory double patenting over claims 1, 12, 13 and 14 of co-pending application serial number 10/753,545.

In order to expedite prosecution, a Terminal Disclaimer is filed herewith.

Therefore, the provisional rejection of claims 1, 15 and 16 on the ground of non-statutory obviousness-type double patenting has been overcome.

III.   35 U.S.C. § 101

The examiner has rejected claims 15-43 under 35 U.S.C. § 101 as being directed towards non-statutory subject matter. This rejection is respectfully traversed.

The examiner states:

> Claim 15 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, specifically directed towards Software program per se. The system does not include structural elements to categorize the Claim statutory, therefore it is directed to software. Software is functional descriptive material that can be considered statutory only if it is both functional and clearly embodied on a computer readable medium and designed to support specific data manipulation function. When functional descriptive material is recorded on a computer-readable medium it will become structurally and functionally interrelated the medium and will be statutory in most cases since the use of technology permits the function of the descriptive material to be realized. See In re Lowry, 32 F.3D 1579, 32 USPQ2d 1031, 1035 (Fed. Cir 1994) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759. A Software structure is functional if the specific arrangement of data enables a computer to accomplish useful result arising from the arrangement of the data in the software. However, only computer readable medium executed instruction by a processor could be statutory, it is not clearly defined as

being embodied in a computer readable medium as executed instruction and is therefore not statutory. See *Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759.

Claims 16-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims refer to a data processing system and the means that perform the function (FIG. 2 and FIG. 3) include computer readable medium. (Specification, Page 15, Paragraph 3). However, Computer readable medium in the system is defined as "communication media" including radio frequency and light wave transmissions. (PG Pub., Paragraph 0068).

Claims 30-43 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention is directed to computer program product stored in a "computer readable medium", however in the Specification Computer readable medium is defined as "communication media" including radio frequency and light wave transmissions. (PG Pub., Paragraph 0068). Communication media is non-statutory.

Office Action dated February 7, 2008, pages 4-6.

As claims 15-43 have been canceled, the rejection of claims 15-43 is now moot.

Therefore, the rejection of claims 15-43 under 35 U.S.C. § 101 has been overcome.

IV.   35 U.S.C. § 103, Obviousness

The examiner has rejected claims 1-11, 14-26, 29-40, and 43 under 35 U.S.C. § 103 as being unpatentable over Caccavale (U.S. Patent No. 5,819,033), hereinafter "*Caccavale*". This rejection is respectfully traversed.

The examiner states:

Regarding Claim 1, Caccavale discloses the claimed aspect of a method for monitoring system performance and communicating detailed system performance(Abstract, Fig. 12) data via an enhanced graphical representation (Caccavale, Column 4, lines 26-29, FIG.12), comprising: querying a current monitoring configuration(Abstract); monitoring system performance using instructions obtained from the current monitoring configuration (Caccavale, Column 2, lines 16-19; polling system data according to the current monitoring configuration; and displaying the polled system data on a graphical representation(Caccavale, Column 3, lines 58-66, FIG.12), wherein the graphical representation comprises a target-type management vector display including regions representing levels of system performance(Column 29, lines 6-19, FIG.12), more specifically, wherein the sphere in FIG. 12 is one of region of acceptable performance, while the region external to the cube represents a region of unacceptable performance, and a metric point within the display identifying the current status of system performance at a particular point in time (Caccavale, Column 27, lines 57-63).

Caccavale does teach graphical representation of a target type pattern, however does not teach the graphical user interface aspect. It would be obvious at the time of the invention to illustrate the three dimensional graph (Caccavale, Column 4, lines 26- 29) on a graphical user interface because this would allow the user monitor the network more efficiently.

Office Action dated February 7, 2008, pages 7-8.

Claims 15-43 been canceled.

The examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). For an invention to be prima facie obvious, the prior art must teach or suggest all claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Independent claim 1 reads as follows:

> 1. A method for monitoring system performance and communicating detailed system performance data via an enhanced graphical user interface, comprising:
> querying a current monitoring configuration;
> monitoring system performance using instructions obtained from the current monitoring configuration;
> polling system data according to the current monitoring configuration;
> displaying the polled system data on a graphical user interface, wherein the graphical user interface comprises a target-type management vector display including regions representing levels of system performance and a metric point within the display identifying the current status of system performance at a particular point in time target-type management vector display comprises three regions;
> performing an adjustment to system operations based on a region in which the metric point is located in the target-type management vector display to move system performance towards a target operational state represented by a point where the vertical axis and horizontal axis meet on the management vector display.

Caccavale does not teach or suggest a graphical user interface comprising a target-type management vector display. The Examiner alleges that this feature is found in the following cited sections of *Caccavale*, which are reproduced below:

> The tuning system 1 estimates that the saturation point will be reached at the time, t_{sat}, when the value of r_b changing at the rate of dr_b/dt will equal the value of RT_{sat} (in other words when the sphere reaches tangency with the cube). Assume, for example, that the current value of r_b equals 5 ms, r_{sat} equals 6 ms and the current value of dr_b /dt equal 0.1 ms/hr. Assuming the workload remains constant, the server will reach saturation in 10 hours. Therefore t_{sat}=10 hrs.
> As a result, the tuning system 1 can set an alarm indicating that the server is approaching saturation behavior when t_{sat} drops below a certain threshold. The system will also set an alarm when the sphere intersects the cube to indicate when the server has entered the saturation region.
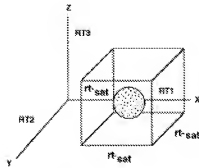
Caccavale, col. 29, lines 6-19.
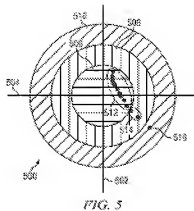
Figure 12

Caccavale, Figure 12.

Column 29, lines 6-19 of *Caccavale* discloses a vector W_a which defines a workload at time t_a. *Caccavale* uses the workload vector W_a to compute an angle theta between the selected workload vector and a reference vector. The value of theta is the mapping of the workload vector from the workload vector to a unique value, or X_a. *Caccavale* defines X_a as a unique value to which is mapped W_a in such a way that W_a is to be the only workload which is mapped to X_a. X_a is also referenced as being a value in the x-axis of an x-y-z parametric phase space, wherein an x-axis value represents the workload of the system. (*Caccavale*, col. 20, lines 33-35.) Thus, the section cited of *Caccavale* discloses taking a given workload vector W_a and mapping it to a unique value X_a using a mapping function.

Figure 12 of *Caccavale* illustrates a three dimensional graph comprising a cube and a sphere. As described in the text corresponding to Figure 12 in column 27, line 57 to column 29, line 25, the volume of the cube is interpreted as an indicator of the maximum capacity of a server to do work. The volume of the sphere is interpreted as an indicator of how much of the maximum capacity is being used at time "t". *Caccavale* determines when a server is approaching a saturation point RT_{sat} by examining "triplets" of measured response times, or three consecutive response times measured from a probe. Each triplet forms a point on the graph as shown in Figure 12. The rate at which the sphere approaches the cube is identified as the rate at which the server is approaching saturation behavior. The saturation point RT_{sat} occurs when the sphere reaches tangency with the cube.

Applicants agree with the examiner's statement that *Caccavale* does not actually teach a graphical user interface. While the examiner alleges that it would have been obvious at the time of the invention to illustrate the three dimensional graph in *Caccavale* on a graphical user interface to enable the user to monitor the network more efficiently, nowhere in the cited sections does *Caccavale* mention anything about a graphical user interface comprising a target-type display, nor is the three dimensional graph in *Caccavale* the same as a target-type display. The three dimensional graph in Figure 12 of *Caccavale* comprises a three dimensional cube which defines the boundaries of acceptable system

performance. Within the three dimensional cube, a three dimensional sphere is also provided which is used to graphically illustrate the response times of the system. Thus, *Caccavale* provides a graphical display comprising a cube and a sphere, wherein movement of the sphere towards the cube indicates the server is approaching saturation behavior.

In contrast, the presently claimed invention provides a graphical user interface comprising a **target-type display**. Figure 5 of the presently claimed invention, reproduced below, illustrates a target-type management vector display in accordance with the presently claimed invention:

FIG. 5

Specification, Figure 5.

As can be seen, the graphical display in *Caccavale* comprising a sphere and a cube is not the same as the target-type display as claimed in the present invention. To establish prima facie obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. MPEP 2143.03. *See also, In re Royka*, 490 F.2d 580 (C.C.P.A. 1974). As all claim limitations are not taught or suggested by *Caccavale*, it is shown that a prima facie case of obviousness has not been made with respect to claim 1. Consequently, *Caccavale* does not teach or suggest the feature of a graphical user interface comprising a target-type management vector display as recited in claim 1 of the present invention

Caccavale also does not teach or suggest performing an adjustment to system operations based on a region in which the metric point is located in the target-type management vector display. The presently claimed invention recites that the region of the target-type display in which a particular metric point is located is used to determine the adjustment to be performed to system operations. In contrast, *Caccavale* discloses a set of triplets (each triplet comprising three measured response time values) measured over time which forms a sphere that indicates how much of the maximum capacity is being used at time "t". (*Caccavale* col. 27, lines 58-60 and col. 28, lines 35-37). The center of the sphere is determined by computing the arithmetic mean of the triplet values calculated over a period of time. (*Caccavale* col. 27, line 65 to col. 28, line 1.) When the entire sphere comprising the set of triplets measured over time moves

towards the bounding cube (the volume of which represents the maximum capacity of the server to do work) or intersects with the bounding cube, *Caccavale* teaches setting an alarm to indicate that the server is approaching saturation behavior or has reached the saturation point. (*Caccavale* col. 29, lines 15-19.) While *Caccavale* teaches using a plurality of triplet values forming a sphere based on the arithmetic mean of the triplet values calculated over a period of time and determining if the server is operating within or approaching an undesired saturation point based on the position of the formed sphere in the cube, the presently claimed invention in contrast recites adjusting system operation based on a metric point that indicates the current status of system performance. While other metric points may be plotted in the target-type display to indicate prior system performance status at various times, the presently claimed invention bases the system operation adjustment to be performed on the region in which the particular metric point indicating the current status of system performance is located, not the location of the other metric points in the target-type display, which indicate prior system performance at a previous time. Since *Caccavale* merely discloses determining whether a server is operating within maximum capacity boundaries by using a plurality of triplets comprising multiple response times measured over a period of time, *Caccavale* does not teach adjusting system operation based on the region in which the particular metric point indicating the current status of system performance is located. Consequently, *Caccavale* does not teach the feature of performing an adjustment to system operations based on a region in which the metric point is located in the target-type management vector display as recited in claim 1 of the present invention.

Caccavale also does not teach or suggest <u>performing the adjustment to move system performance towards a target operational state represented by a point where the vertical axis and horizontal axis meet on the management vector display</u>. The Examiner alleges that the target operational state represented by a point where the vertical axis and horizontal axis meet on the management vector display is taught by *Caccavale* in Figure 12 (reproduced above). However, Figure 12 shows that acceptable system operation is determined based on the position of the sphere within the cube. The volume of the cube is interpreted as an indicator of the maximum capacity of a server to do work. (*Caccavale*, column 27, line 57 to column 29, line 25.) *Caccavale* uses the plurality of triplets (three consecutive response times measured from a probe) to determine when a server is approaching a saturation point (when the sphere reaches tangency with the cube). Thus, *Caccavale* teaches that a non-saturated operational state of the server is represented by the position of the sphere within the cube, rather than disclosing a target operational state represented by a point where the vertical axis and horizontal axis meet on the management vector display. As shown in Figure 12, the origin (where the three axes meet) in *Caccavale* is outside of the cube. *Caccavale* would not want to move system performance to a target operational state indicated at the origin, since such a move towards this location will cause the server to reach a saturation point.

Consequently, *Caccavale* does not teach or suggest the feature of performing the adjustment to move system performance towards a target operational state represented by a point where the vertical axis and horizontal axis meet on the management vector display.

Thus, *Caccavale* does not teach or suggest the features of independent claim 1. Since claims 2, 3, 5-10, 12-14, and 44 are dependent claims depending from claim 1, the same distinctions between *Caccavale* and claim 1 are also applicable to these dependent claims. Consequently, *Caccavale* also does not teach or suggest all of the features of claims 2, 3, 5-10, 12-14, and 44.

Therefore, the rejection of claims 1-11, 14-26, 29-40, and 43 under 35 U.S.C. § 103 has been overcome.

V.   35 U.S.C. § 103, Obviousness

The examiner has rejected claims 12-13, 27-28, and 41-42 under 35 U.S.C. § 103 as being unpatentable over *Caccavale* in view of Manghirmalani (U.S. Patent No. 5,819,028), hereinafter "*Manghirmalani*". This rejection is respectfully traversed.

The examiner states:

> Regarding claims 12-13, 27-28 and 41-42 most of the limitations have been met in the rejection of Claims 1, 16 and 30. See rejection details for Claims 1, 16 and 30. Caccavale discloses the claimed aspect of the target-type management vector display comprises two regions, wherein a first region indicates satisfactory performance (FIG. 12, sphere), a second region indicates unacceptable performance (FIG. 12, when sphere intersects the cube is the unacceptable region).
> Caccavale does not specifically teach another region "a third region indicates improvement required performance" and regions are displayed using different colors, however Manghirmalani discloses three different region in FIG. 6, L 606, N 607, H 608. The region 606 is shaded in red. (Caccavale, Column 9, lines 38-40). Furthermore in FIG. 12, 1211, 1212, 1213 indicated regions with different colors. (Caccavale, Column 12, lines 34-37).
> It would be obvious to one of ordinary skill in the art at the time of invention to combine Caccavale's target vector representation with Manghirmalani's different color region concept because this would allow the user to monitor the system more efficiently.

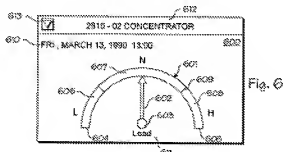Office Action dated February 7, 2008, pages 7-8.

Claims 27-28 and 41-42 have been canceled.

Claims 12 and 13 are dependent claims depending from claim 1. As shown in section IV above, *Caccavale* does not teach the features of a graphical user interface comprising a target-type management vector display, performing an adjustment to system operations based on a region in which the metric point is located in the target-type management vector display, and performing the adjustment to move system performance towards a target operational state represented by a point where the vertical axis and horizontal axis meet on the management vector display as recited in claim 1. Since all of the features of

claim 1 are not found in *Caccavale* as alleged by the examiner, a combination of *Caccavale* and *Manghirmalani* also cannot reach the presently claimed invention in dependent claims 12 and 13.

In addition, contrary to the examiner's assertions, *Manghirmalani* does not teach or suggest the features of claims 12 and 13 or the present invention. With regard to claim 12, applicants agree with the examiner that *Caccavale* does not teach "a third region that indicates improvement required performance". (Office Action dated February 7, 2008, page 13.)

However, the examiner points to *Manghirmalani* as teaching a third region that indicates improved required performance in Figure 6, as shown below:

Manghirmalani, Figure 6.

The examiner alleges that *Manghirmalani* teaches teaching a third region that indicates improvement required performance since Figure 6 shows three load sections. The load sections are described in the text corresponding to Figure 6, which is reproduced below:

> Similar to the health, the load is displayed on a CRT computer monitor display on the network management station in the forms of either a dial meter, graphical meter, or digital meter. **FIG. 6** shows the load in a dial meter **600** for a concentrator. A crescent-shaped load bar **601** represents the range of the load. An indicator **602** pivots about point **603** and swings between endpoints **604** and **605**. The left endpoint **604** corresponds to no load on the network/device being monitored. The right endpoint **605** corresponds to an extremely heavy load. The load increases linearly from left to right between the two endpoints **604** and **605**. A portion **606** is shaded in red, which signifies that the network/device is being overloaded. The location of indicator **602** between endpoints **604** and **605** determines the load at that time. In one embodiment, the letters L, N, and H represent "low", "normal", and "heavy", loads. Load bar **601** is broken into three sections **606-608**, which respectively correspond to low, normal, and high loads. Note that the top end **609** of the normal range **607** is less than the maximum scale **605**. The load dial meter **600** also displays the current data and time **610**, meter name **611**, the network/device being monitored **612**, and an open/close icon **613**.

Manghirmalani, col. 9, lines 28-49.

This section discloses a crescent shaped load bar which represents the range of the current load. Section 606 corresponds to a low load on the monitored device, section 607 indicates a normal load on the monitored device, and section 608 indicates a heavy load on the monitored device. However, *Manghirmalani* does not disclose a section that indicates 'improvement required performance'.

Manghirmalani merely discloses using the three sections, low, normal, and high, to indicate the current load applied to a network device, rather than the performance of the system.

With regard to claim 13, applicants agree with the examiner that *Caccavale* does not teach "regions are displayed in different colors". (Office Action dated February 7, 2008, page 13.) However, *Manghirmalani* also does not disclose displaying the regions in different colors. *Manghirmalani* merely discloses that a portion of one section is shaded in red, rather than teaches all the (three) sections displayed entirely (not a portion) in a different color.

Thus, the combination of *Caccavale* and *Manghirmalani* does not teach or suggest all of the features of claims 12 and 13 of the present invention.

Therefore, the rejection of claims 12-13, 27-28, and 41-42 under 35 U.S.C. § 103 has been overcome.

VI.   Conclusion

It is respectfully urged that the subject application is patentable over the cited references and is now in condition for allowance.

The examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,

/Cathrine K. Kinslow/

Cathrine K. Kinslow
Reg. No. 51,886
Yee & Associates, P.C.
P.O. Box 802333
Dallas, TX 75380
(972) 385-8777
Attorney for Applicants